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Citizens' Bulletin

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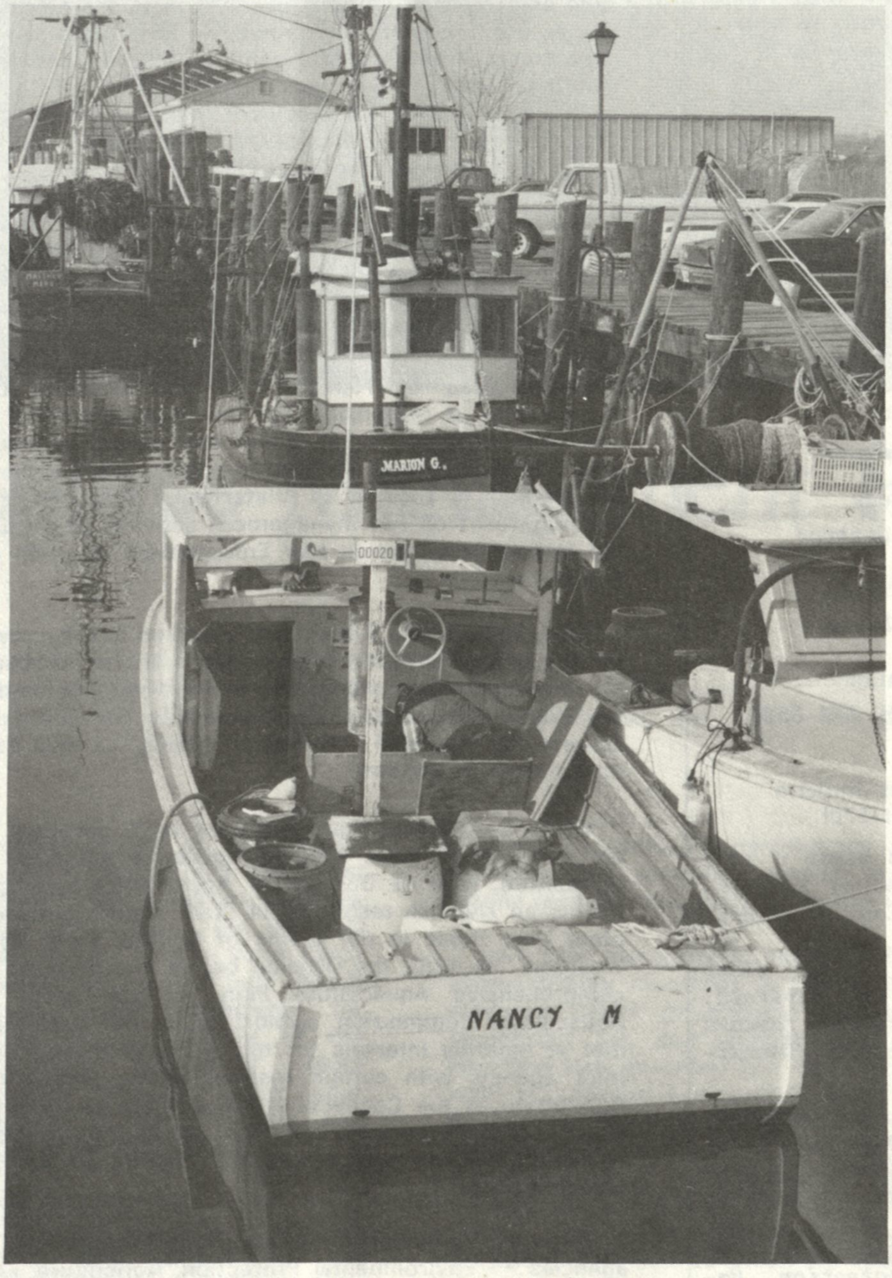

Marine Fisheries

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February 1985
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Cover Photo: The Nancy M out of Stonington, Connecticut, Robert Paier.

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The Year of the Oceans

By Eric M. Smith,
Assistant Director of Fisheries
Marine Fisheries Program

On March 8, 1984, a presidential proclamation was issued, recognizing 1984 as "The Year of the Oceans." In this proclamation, it was put forth that as our country has grown, its ties to the sea have assumed greater importance. In this era of expanded need for resources, it was pointed out that the oceans will play an even more critical part in helping mankind build a better world. It is toward this goal that some of the programs of the Department of Environmental Protection which influence Long Island Sound, its resources, and its users, are directed.

The Coastal Area Management Program exercises broad authority over the use and development of the shoreline and man's activities there which may affect marine resources. This authority is exercised in cooperation with coastal communities upon development of municipal coastal management programs.

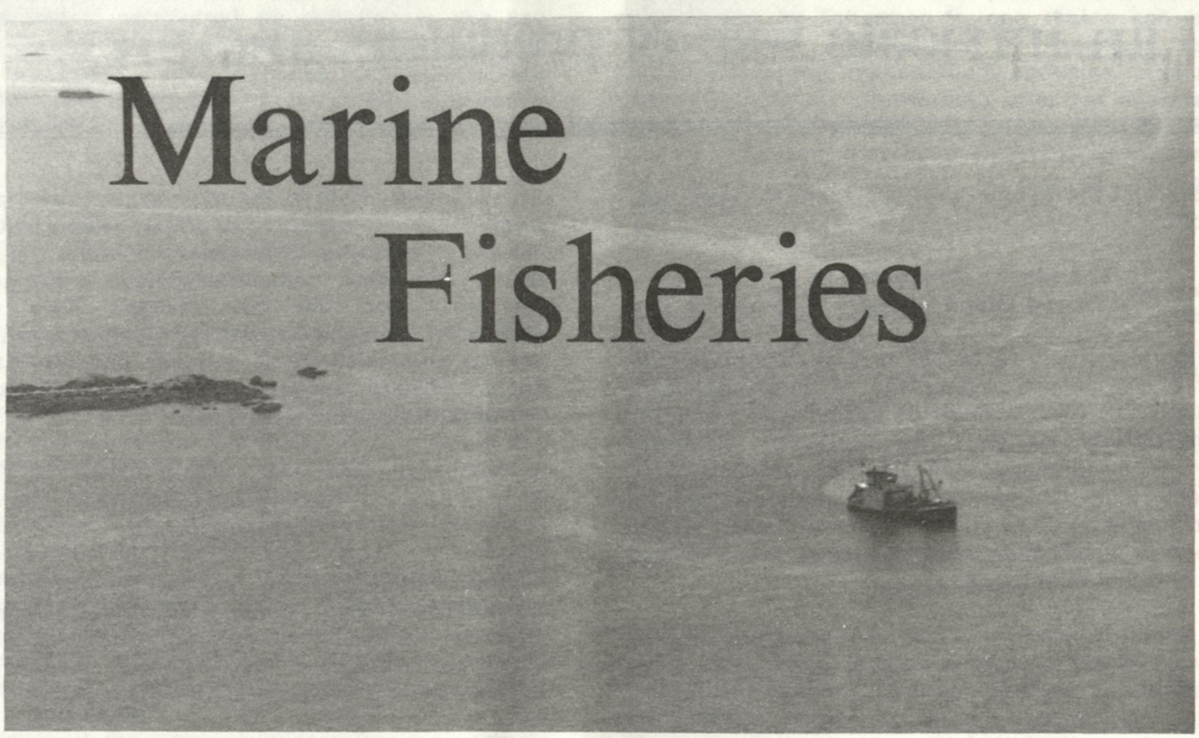
The Bureau of Fisheries, of the Division of Conservation and Preservation, is responsible for the management of finfish, lobster, squid, and crab resources living within the waters of the state. The Bureau's main office is located in Hartford, while the Marine Fisheries Program of the Bureau is located in Waterford. This site supports field marine fisheries research and management activites of the Department as well as the Marine Conservation Law Enforcement Program of the Bureau of Law Enforcement.

Other units of the Department involved in resource management include the Division of Environmental Quality's Water Compliance Unit, responsible for developing and monitoring clean water standards in Connecticut, and the Water Resources Unit, responsible for coordinating the permitting process for regulated activities in coastal as well as inland waters. Both have offices in Hartford.

Other Connecticut state agencies have corollary responsibilities which are pertinent to more specific legislative mandates. The Department of Agriculture, with its Division of Aquaculture located in Milford, manages molluscan shellfish resources in state waters outside of town jurisdiction, other than those in the towns of Milford, West Haven, New Haven, and Westport. In 1983, the Division began coordinating the development of a comprehensive Aquaculture Plan for the state of Connecticut. An Aquaculture Commission, authorized by the implementing legislation, has met at monthly intervals for this purpose throughout 1983 and 1984. A third agency, with certain responsibilities similar to those of DEP and Agriculture, is the Connecticut Department of Health Services in Hartford, which exercises controls over the harvesting, processing, and distribution of oysters and clams to assure that they do not present a health hazard to consumers.

Through communication and coordination of activities, the three agencies -- Environmental Protection, Agriculture, and Health Services -- will continue to manage marine resources and protect the public health of citizens using those resources, for the benefit of all Connecticut's residents. ■

Marine Fisheries



Eric Smith photos

A Resource Management Plan

By the Staff of
the Marine Fisheries Program, Bureau of Fisheries,
Division of Conservation and Preservation, DEP

Have you ever wondered which of the marine species inhabiting Long Island Sound are the most abundant? Which support the most important fisheries and which have supported them during the last 100 years? Who among the citizens of the state catch those resources and to what uses are they put? Which departments of government are responsible for managing those resources and the nature of the problems which face those managers? Most importantly, have you ever thought about what motivates resource managers in their activities and how they intend to manage "your" resources?

A Marine Resources Management Plan for the State Connecticut begins to answer these questions. The [illegible]4-page planning effort was funded by the Department of Environmental Protection Coastal Area Management Program and developed over a two-year period by staff of the Department's Marine Fisheries Program. It presents descriptions of resources and fisheries, and identifies issues and strategies for marine resource management in the 1980s.

Part One summarizes much of the knowledge of marine fishery resources in Connecticut and identifies resources, users, government agencies, and programs responsible for, and working with, those resources. Part One also describes the magnitude of historical as well as present Connecticut sport and commercial fisheries. Part Two identifies problems, issues, and opportunities in both marine resource use and management. It is intended to stimulate positive thinking on a variety of current resource management issues. Part Three suggests six broad categories of policies and objectives which are intended to guide the activities of marine resource managers in Connecticut. Throughout all sections, the emphasis of the plan relates to marine fisheries — the integration of our

The ocean's living resources constitute an intricate web of predators and prey.

resources and the people who use them for food, fun, and profit.

The Marine Resources Of Long Island Sound

The marine fishery resources of Connecticut exist in a diverse and unique assemblage of finfish, shellfish, and crustacea. The location of Long Island Sound in mid-temperature latitudes, its protected, relatively shallow geomorphology, and its high nutrient load, seasonally mild temperature, and moderate salinity, make it unique as spawning and nursery habitat and as a location in which many coastal species pause to feed during seasonal migrations.

The Sound is home to a mix of marine fish species which collectively support a number of fisheries. The most important resident species include the winter flounder and blackfish, both of which spawn and spend most or all of their lives in the waters of the Sound. Migratory fish species -- those which either spawn here and migrate elsewhere or which spawn outside of the Sound and only move through on feeding migrations -- include the bluefish, weakfish, scup (porgy), fluke, butterfish, and a number of less important species. Numerous other species are important both as fishery resources and as forage for important food fish. These include species such as mackerel, menhaden, river herring, and alewives. Some species serve principally as forage for important food species. Examples include the Atlantic silverside, smelt, sandlaunce, anchovies, and killifish.

Important anadromous species fished for in Connecticut -- ones which spawn in fresh water but live the rest of their lives in salt water -- include the Atlantic salmon and the American shad. Another important anadromous species, but one which does not spawn in Connecticut, is the striped bass.

Important crustacean species include the American lobster, the blue crab, and two species of "cancer" crabs -- the rock and Jonah crabs. A great number of crustacean species, which are not targets of fisheries, are abundant throughout the Sound. These include hermit crabs, green crabs, and mud crabs. Horseshoe crabs -- which are not crabs at all but more closely related to spiders and mites -- abound in embayments during the spring and early summer.

Numerous molluscan shellfish species are found in the Sound. In fact, most observers of marine resources believe that the greatest potential for expansion of harvestable marine resources in Long Island Sound exists in the molluscan -- and principally bivalve -- species. The most important of the "bivalves" occuring in the Sound include the American oyster, the hard clam or "quahog," the soft clam, "steamer," and the bay scallop. Two important molluscan shellfish resources which are not bivalves are the channeled whelk, "conch", and the long-finned squid. Others include the blue mussel and small concentrations of the surf clam.

The Marine Fisheries Of The Sound

The marine fisheries of the Sound are generally classified as either commercial or recreational. Each class is composed of a variety of smaller fisheries which are directed towards a certain species or mix of species using a specific type of fishing gear.

Recreational fishermen using hook and line account for the vast majority of the finfish catch taken from the Sound. In 1980, the last year of record for recreational catches, anglers caught over eight million pounds of fish while commercial fishermen fishing in the Sound took less than half this amount. Recreational catches are composed mostly of winter flounder, bluefish (both adults and young-of-the-year, or "snappers"), and scup. Other traditionally important species include blackfish, weakfish, and striped bass.

Most commercial landings of food fish species are made by the bottom trawl fishery, followed by the shad gill net fishery and the commercial hook and line fishery. Historically, the greatest landings of food fish have been made by offshore fishermen fishing outside of Connecticut waters and landing in Stonington. Most of the offshore trawl landings are composed of winter and yellowtail flounders and butterfish, while inshore catches are composed of winter flounder and scup. The greatest single species catches in a Long Island Sound commercial fishery historically have been made by the menhaden purse seine fishery.

Commercial fishermen land the greatest amount of lobster and molluscan shellfish taken from the Sound. In 1983, about 1.7 million pounds of lobster taken mostly by pot lobstermen and 1.8 million pounds of combined molluscan shellfish -- chiefly oyster meats landed by the mariculture industry -- were taken from the Sound and landed in Connecticut. Recreational catches of lobster taken by pot and by SCUBA diving amount to 100,000-150,000 pounds per year. The level of recreational shellfish catches is a relative unknown. Most of the productive shellfish beds accessible to recreational shell fishermen in Connecticut are closed due to pollution. If water quality improves, it is believed that the recreational harvest of both hard and soft-shell clams can increase. One mulluscan species whose harvest is unaffected by pollution is the bay scallop. This is because only the large "adductor" muscle is eaten and because pollutants are concentrated only in the gut of the scallop and not in the muscle.

Management Of Long Island Sound Fishery Resources

Fishermen and other resource users are often frustrated with what they see as the "imperfection" or lack of precision in the marine biological sciences. It is difficult to understand the complexities of the marine ecosystem, the enormous variability in abundance and distribution of marine species, and the intricate web of predators and prey that constitute the ocean's living marine resources. The existence of marine resources in an environment not readily visible to the human eye is a large part of the reason that understanding them and subsequently managing them is such a complex task. Until relatively recently -- through the use of SCUBA and deep sea submersibles -- resources could only be observed upon capture by fishing gear or other sampling techniques. This meant that any understanding of the interaction of a species with its environment had to be inferred from sampling programs rather than direct observation. Even today, physical limitations on diving activities preclude most observations of marine life in anything other than the shallow water, near-shore environment. Similarly, the finances necessary to support a submersible observation program make this means of obtaining information virtually impossible. As a result, marine resource managers face the challenge of understanding those resources using the results of sampling programs which may not always reflect the true abundance, distribution, and population dynamics of a species.

An additional complexity facing managers is the simple magnitude of that which must be managed. It is one thing to attempt the management of the fishery resources in a 100-acre lake but quite another to attempt the same effort in a coastal sea. Long Island Sound alone is 928 square nautical miles, or 787,000 acres, yet it represents only 0.04 percent of the earth's marginal seas and a minute 0.0009 percent of the world's oceans.

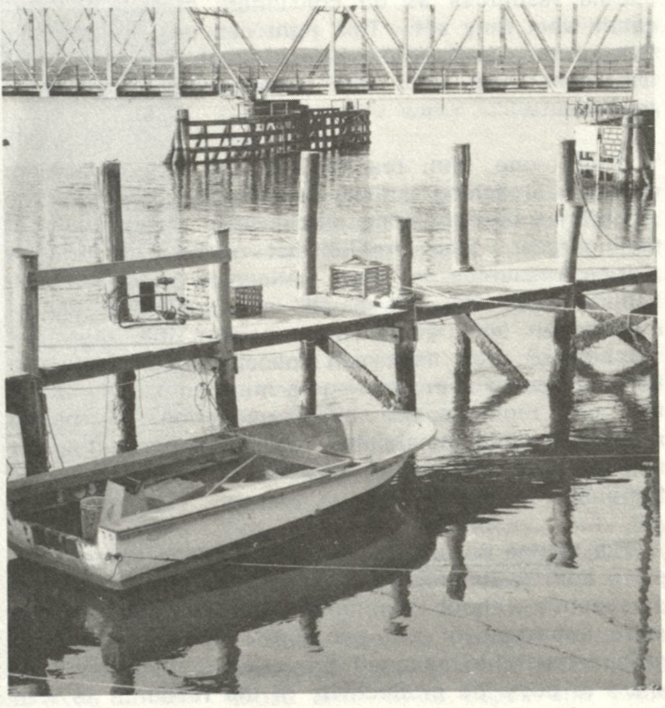
Our understanding and management of marine resources is made more difficult by the behavior of marine species. Many of Connecticut's marine fishery resources are migratory, often spawning in oceanic waters and seasonally inhabiting Long Island Sound as a nursery and feeding area. On the other hand, many species migrate to the Sound to spawn and then continue their feeding migration in offshore waters or the waters of other states. Still other species are relatively or entirely non-migratory members of the Long Island Sound ecosystem.

The migratory nature of most of the Sound's fishery species poses additional problems for resource managers. Since the behavior of many important species carries them across jurisdictional boundaries, exploitation by fishermen in one region can have an effect on the opportunities of fishermen in other areas. Therefore, management activities must also be interjurisdictional. Developing effective interstate and state/federal cooperative management plans which protect migratory resources while caring for the rights of citizens of all states is one of the greatest challenges facing marine resource managers in the 1980s.

Developing such plans, however, is not the most difficult of the problems that must be addressed. Enlightened citizens have finally realized that the abundance of our marine resources is not infinite and that inevitable increases in management efforts will be necessary to protect as well as maximize the availability of those resources and, finally, to equitably allocate opportunities for resource use among all who would use them.

Management Of Marine Fishery Uses

A central theme of the Marine Resources Management Plan relates to the importance of marine resources as a source of seafood for all citizens. There are two principal groups involved in the direct utilization of the Sound's fishery resources. These are the fishing consumers and the non-fishing consumers of seafood. The former group includes recreational and commercial fishermen who catch and eat seafood. The latter group represents a usually uncounted and underestimated but extremely large and important component of our society -- the three million


Robert Paier

The pier at Niantic, one of Connecticut's commercial fishing centers.

> We believe commercial and recreational fishermen would do well to pool and redirect their energies toward the improvement of resources in Long Island Sound.

Connecticut consumers and 215 million nationwide who, for whatever reasons they may have, do not fish for seafood but purchase what is consumed. It is proper that this user group be considered equal in importance to any of the more visible groups using our resources in the event that questions arise regarding the allocation of opportunities for resource use.

We believe that those citizens unable or unwilling to fish for the seafood they eat have as much right to marine resources as do consumers of seafood who catch what they eat. This right can only be attained through the purchase of seafood caught by commercial fishermen and sold in retail establishments or restaurants.

While one can readily see the importance of commercial fishing activity, one must not ignore the sometimes overwhelming efficiency of certain types of fishing gear. The problem of over-exploitation of marine resources is most noticeable in commercial fisheries and has an equal in recreational fishery exploitation only when one considers the enormous numbers of sport fishermen collectively taking marine fish species. Fishery managers must constantly watch for and regulate the over-exploitation of marine resources while maintaining realistic opportunities for fishermen to provide seafood for themselves and for the public.

The Marine Resources Management Plan attempts to place both commercial and recreational fishery uses in perspective without identifying either user group as the more important of the two. The activities of both groups must be managed properly so that they may share in both the productivity of the resource as well as the burden of management efforts designed to maintain that productivity.

The resolution of conflicts over resource use has become an important aspect of marine resource management in recent years, no doubt the result of increasing population growth in coastal areas. Conflicts between marine resource users in Connecticut as well as in all coastal states can be divisive and often appear unsolvable. They arise for a variety of reasons, including competition between commercial fishermen for valuable resources, and the concern of recreational fishermen that commercial fishermen will get the "lion's share" of those resources. The conflicts often divert the energies of a concerned public from the true threats to our resources -- pollution and habitat destruction caused by poorly-planned coastal development. We believe commercial and recreational fishermen would do well to pool their energies and redirect them toward conditions or events, the alteration of which will improve the availability of resources in Long Island Sound.

The Department's philosophy in the management of marine resources is that Long Island Sound represents an invaluable food-producing resource -- both to the fishing and the non-fishing consumer -- and this is believed to be its most important use. Other uses should be scrutinized so that the food-producing capability of the resource and the opportunities offered us by it are not diminished. Nothing in this statement is intended to lessen the importance of other uses of the Sound. The opportunities for recreation, game fishing, and other water-related activities presented by Long Island Sound are enormous and require the continued attention of managers in planning for coastal area use.

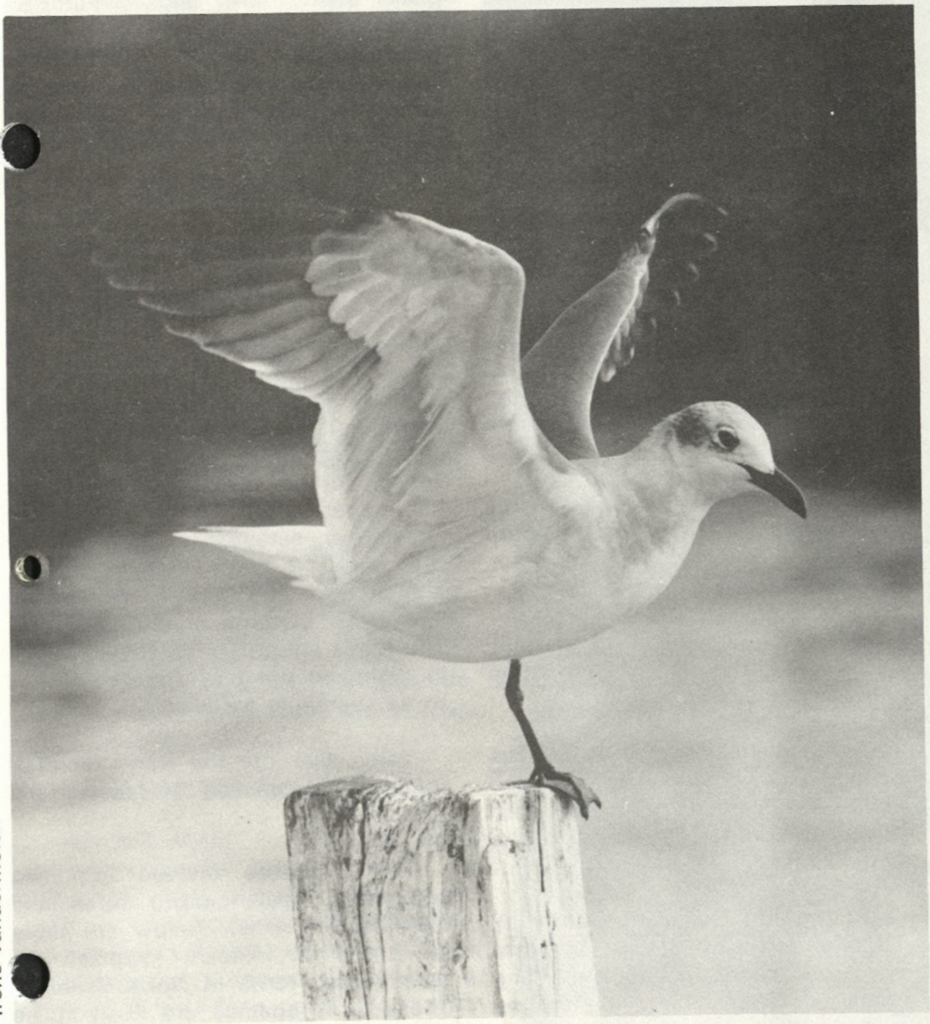
All elements of A Marine Resources Management Plan for the State of Connecticut should be viewed as a contribution to a dynamic management process, capable of change and requiring change, in order to be effective. It is hoped that all users understand the common opportunity provided by the resource and the rights of all to use it wisely. ■

Long Island Sound is an invaluable food-producing resource.

DEP Wildlife Information Series

Gulls and Terns

An integral part of any coastal scene



The laughing gull: Gulls fly with slow, deliberate strokes, at no great speed.

Irene Vandermolen

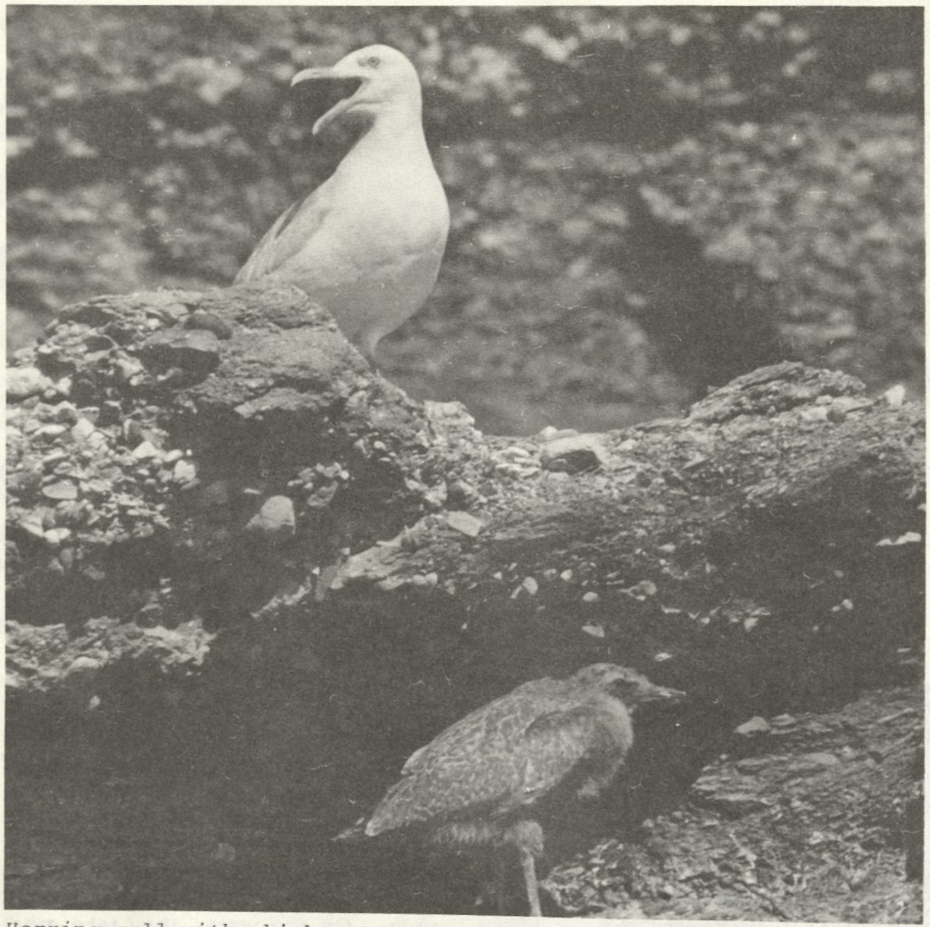
The gull family consists of many species, more than just "sea gulls," though these are the most readily seen in Connecticut. Other kinds of gulls are equally at home on land, feeding in fields and garbage dumps, for they are primarily scavengers. All gulls have strong, hooked bills, long pointed wings, webbed feet, and all swim. On the water, they take most of their food from the surface, seldom diving for it as terns do.

Gulls fly with slow, deliberate strokes, strongly, but at no great speed. Some soar like hawks over both land and water while searching for food.

Immature gulls are generally mottled-gray or brown. Some species do not breed or attain adult plumage until they are three years old. Not only are the sexes similar, but the variation in color and plumage pattern is considerable among immature gulls, making identification difficult.

Vocalizations differ significantly among species of gulls. Each bird has a wide vocabulary, but the feeding call, so often heard at fish wharves, is the best known.

Gulls can be divided into two categories for ease of description: those with white heads and those with dark or black heads.



Herring gull with chick: Immature gulls are generally mottled-gray or brown.

Leonard Lee Rue III photos

White-headed gulls common to the Northeast and Connecticut:

1. **Glaucous Gull** (Larus hyberboreus). This species breeds in the arctic mainland of North America and winters in the Great Lakes area.

2. **Great Black-backed Gull** (Larus marinus). Largest of the North American gulls, breeding from northern Labrador to New York along the sea coast. Wintering range is from Newfoundland to South Carolina. Associates with herring gulls and terns along coastal sandbars and mud flats.

3. **Iceland Gull** (Larus glaucoides). Breeding range is southern Baffin Island to extreme northern Quebec. Winters as far south as Virginia.

4. **Herring Gull** (Larus argentates). Breeds in Alaska and Canada north to the Arctic Ocean, as well as in north-central United States. Herring gulls winter on both the Atlantic and Pacific coasts south to the West Indies.

5. **Ring-billed Gull** (Larus delawarensis). Can be found both breeding and wintering in Connecticut.

Dark-headed gulls which are periodic visitors to the Northeast and Connecticut:

1. **Black-headed Gull** (Larus ridibundus). A wanderer which breeds in Iceland and northern Europe; it is regularly seen on the Atlantic coast.

2. **Laughing Gull** (Larus atricilla). A coastal bird, which breeds from Nova Scotia south to Venezuela, and is seen occasionally in the Maritime Provinces, and rarely in Quebec and Ontario.

3. **Franklin's Gull** (Larus pipixcan). Breeds in north central United States and the Canadian prairies. Sighted regularly around the Great Lakes, but rarely observed in Connecticut.

4. **Little Gull** (Larus minutus). Once thought to be a rare straggler from Europe until it was found nesting at Oshawa, Ontario, in 1962. It is seen rarely, but with some regularity on the East Coast.

5. **Sabine's Gull** (Xema sabini). The only forked-tailed gull observed in Canada. It has a dark gray head and breeds in the arctic islands of Canada, Greenland, and Siberia. It migrates to the Pacific coast but has been seen in the east as well.

6. **Bonaparte's Gull** (Larus philadelphia). The only dark-headed gull seen in large numbers throughout the Northeast. This tree-nesting gull chooses a coniferous forest close to muskegs (grassy bogs) or lakes and usually builds a nest 15 to 20 feet above ground.

TERNS

General

Terns (members of the subfamily Sterninae) are medium-sized water birds with long, slender, pointed wings, forked tails, sturdy, straight bills generally with pale coloring, and a dark cap extending to the back of the neck. A tern flies buoyantly, almost as if the body is moving up and down, pivoting on the wing tips. The tern's bill points downward while in flight, so the bird appears always to be searching for food.

Terns dive into the water for their food which consists of insects and small fish.

Terns can be divided into two categories: pale-backed terns and dark-backed terns. Below are three of the ten known species of pale-backed terns in North America. These three species are likely to be seen in Connecticut and the northeast.

Pale-backed Tern

1. **Common Tern** (*Sterna hirundo*). A slender bird with a fairly heavy, dark-tipped red bill and reddish legs. The crown is black and the back and wings are pearl-gray. The underparts and the long, deeply-forked tail are white. The call is a rattling "kee-urr."

2. **Arctic Tern** (*Sterna paradisaea*). Breeds around the North Pole and winters in the Southern Hemisphere; some birds travel as far south as Antarctica. Migration routes are over water. It is likely that some individuals of this species have the longest migration route of any bird and, in the course of a year, see more daylight than any other species.

3. **Caspian Tern** (*Sterna caspia*). A large tern (similar to a gull in size and in its habit of soaring) with a heavy, deep-red bill; black legs; wide, gull-like wings; and a white, slightly-forked tail.

Dark-backed Tern

Only one species of dark-backed tern exists; the Black Terns (*Chlidonias niger*).

This little tern (nine inches long) is darker than the other tern species found in the northeast. It feeds mostly on insects in the summer as it flies erratically over marshes and adjacent meadows.

Black terns breed in shallow lakes and marshes across inland North America from British Columbia to southwestern Quebec and from California to New York. While it is far more common on the northern prairies, black terns have sometimes been observed on eastern marshes.

Economic and Social Values

As scavengers, gulls are often called "clean-up birds," playing an important role in the food chain. Although not economically important, and at times a nuisance around town land fills and a danger to low-flying aircraft, it was "sea gulls" that saved the Mormon's livelihood from ruin in Utah because they ate the crop-destroying locusts.

Aesthetically pleasing to many people, gulls and terns are as integral a part of any coastal scene as the sand and surf. Gulls, especially, are no doubt the subject of more drawings and other artwork depicting seascapes and fishing piers than any other family of birds.

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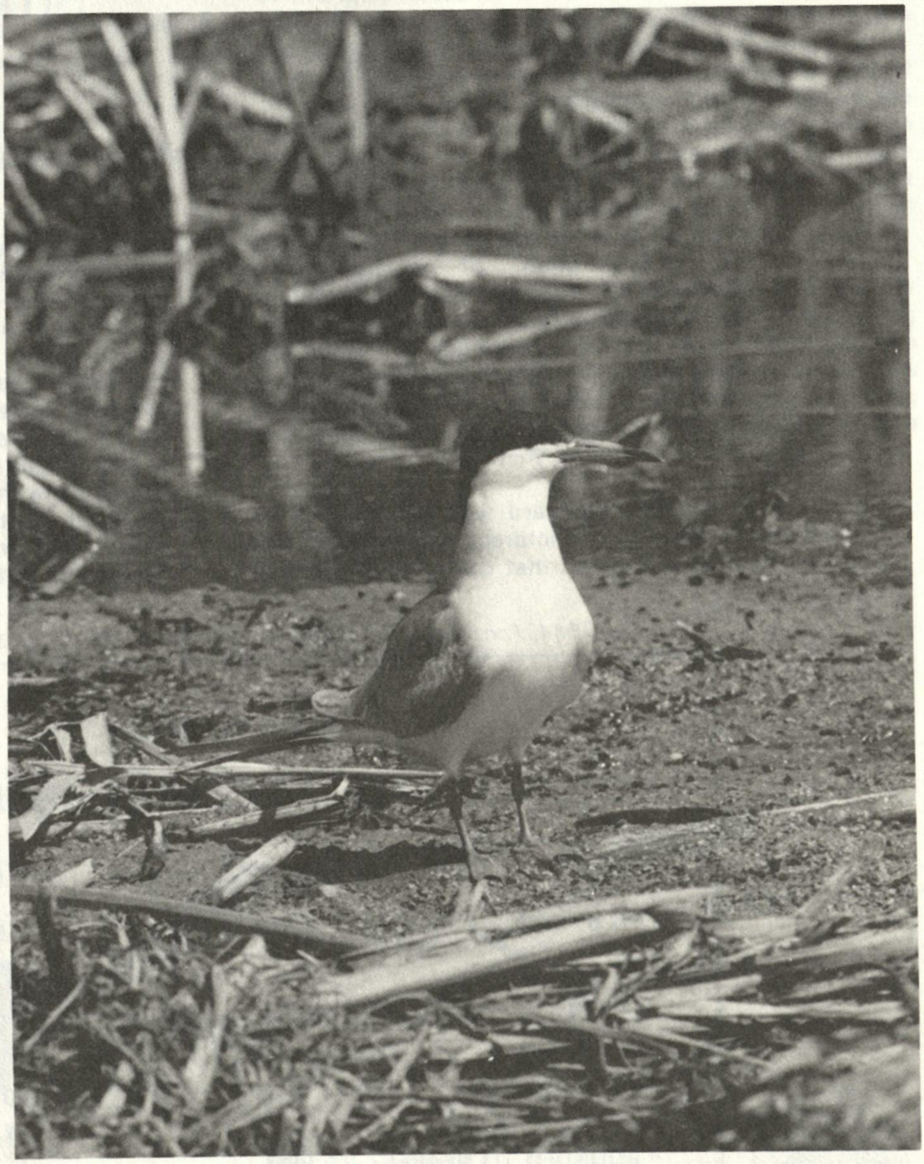
The Technical Assistance Information Series is 75 percent funded by Federal Aid to Wildlife Restoration -- the Pittman-Robertson (P-R) Program. The P-R Program provides funding through an excise tax on the sale of sporting firearms, ammunition, and archery equipment. The remaining 25 percent of the funding is matched by the Connecticut Wildlife Bureau. ■



The common tern: The tern is a medium-sized water bird with a dark cap extending to the back of the neck.

An Evaluation of Polychlorinated Biphenyls (PCBs) in Bluefish

By Eric M. Smith,
Assistant Director of Fisheries Marine Fisheries Program

Great concern has been voiced during the past year regarding the concentration of polychlorinated biphenyls (PCB) in marine fish species. According to New Jersey and Massachusetts studies completed in 1983, PCBs -- a known carcinogen in laboratory animals -- were found in bluefish occasionally in amounts greater than the U.S. Food and Drug Administration (FDA) tolerance level of 5.0 parts per million (ppm) which existed at that time.

In August, 1984, this standard was reduced by the FDA to 2.0 ppm. Due to the interest generated by this reduction, the FDA requested that DEP provide bluefish from Long Island Sound to determine the concentrati of the contaminant in the species and the distributi of potentially contaminated species in the Sound.

Four areas of Long Island Sound were sampled for three size-classes of fish. The areas were within two to three miles from shore in western Long Island Sound between Bridgeport and Norwalk, central Long Island Sound off New Haven, eastern Long Island Sound from the Connecticut River to "The Race" at the entrance to the Sound, and in waters greater than three miles from shore in the mid-Sound area from Bridgeport to the Connecticut River.

1984 Incidence of PCBs in Bluefish in Long Island Sound.

	PARTS PER MILLION				
LENGTH CLASS	WLIS	CLIS	ELIS	MID-SOUND	AVERAGE
Fish less than 8"	0.3	0.6	no fish	0.6	0.5
Fish 8"-20"	1.3	1.0	1.1	0.6	1.0
Fish greater than 20"	1.5	1.5	0.8	1.7	1.4
AREA AVERAGE*	1.0	1.0	1.0	1.0	

* ROUNDED TO NEAREST 0.1 PPM

> . . . no cause for concern exists for those eating bluefish from Long Island Sound. However, proper methods of preparation and consumption in moderation are "the best bet."

The three size classes of bluefish analyzed were "snappers," or those less than eight inches in length, fish greater than eight inches but less than 20 inches in length, and fish greater than 20 inches in length.

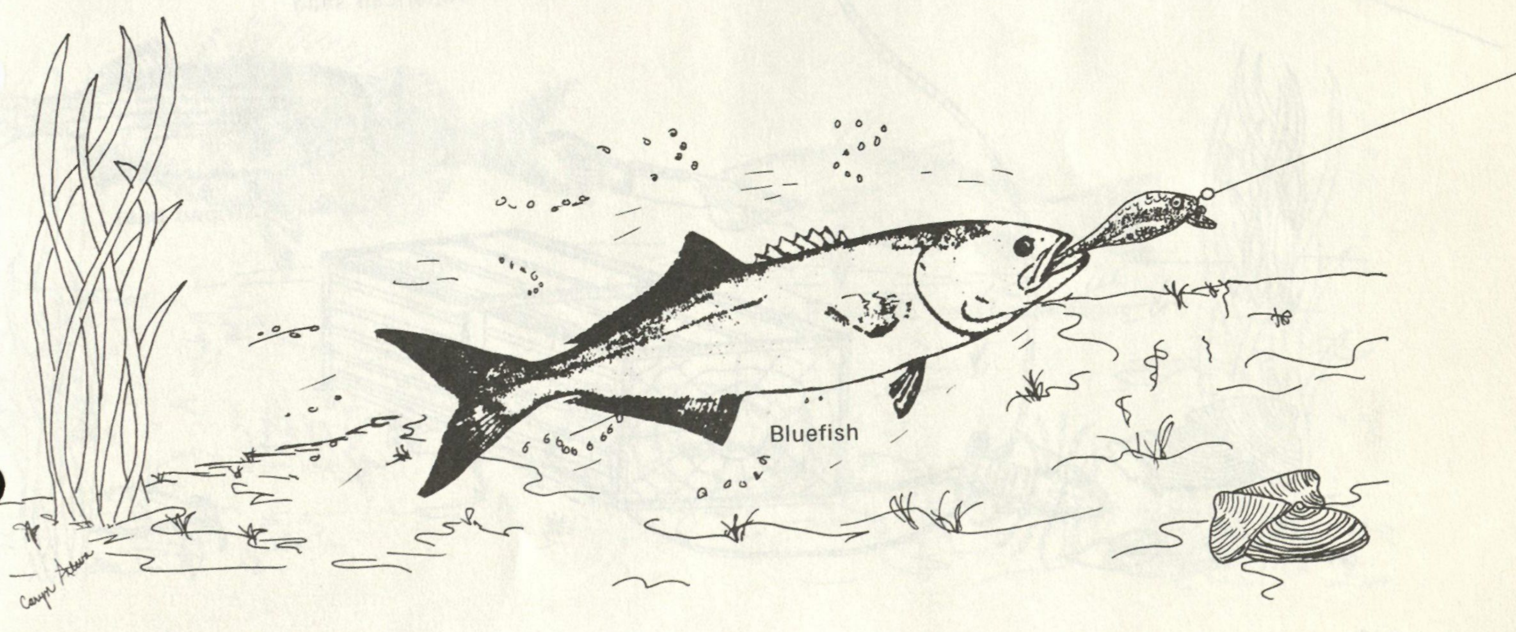
All fish were analyzed in the Boston laboratory of FDA. The results of these analyses are presented in the above chart.

Given these results, there appears to be no cause for concern in eating bluefish from Long Island Sound, since all observed levels were below the FDA tolerance level of 2.0 ppm. Nonetheless, further investigation may be warranted and a comprehensive, coastwide study of PCBs in blue fish, to be conducted in 1984–1985 by the National Marine Fisheries Service and the Food and Drug Administration, is intended to shed additional light on the coastwide concentration of the contaminant.

Both New Jersey and Massachusetts have advised consumers of bluefish to limit their consumption to not more than one meal per week. They have further advised pregnant or breastfeeding mothers to abstain from eating meals taken from large bluefish. This is because the larger fish are known to have the greatest concentrations of PCBs and because PCBs are transmitted via the placenta and through mother's milk.

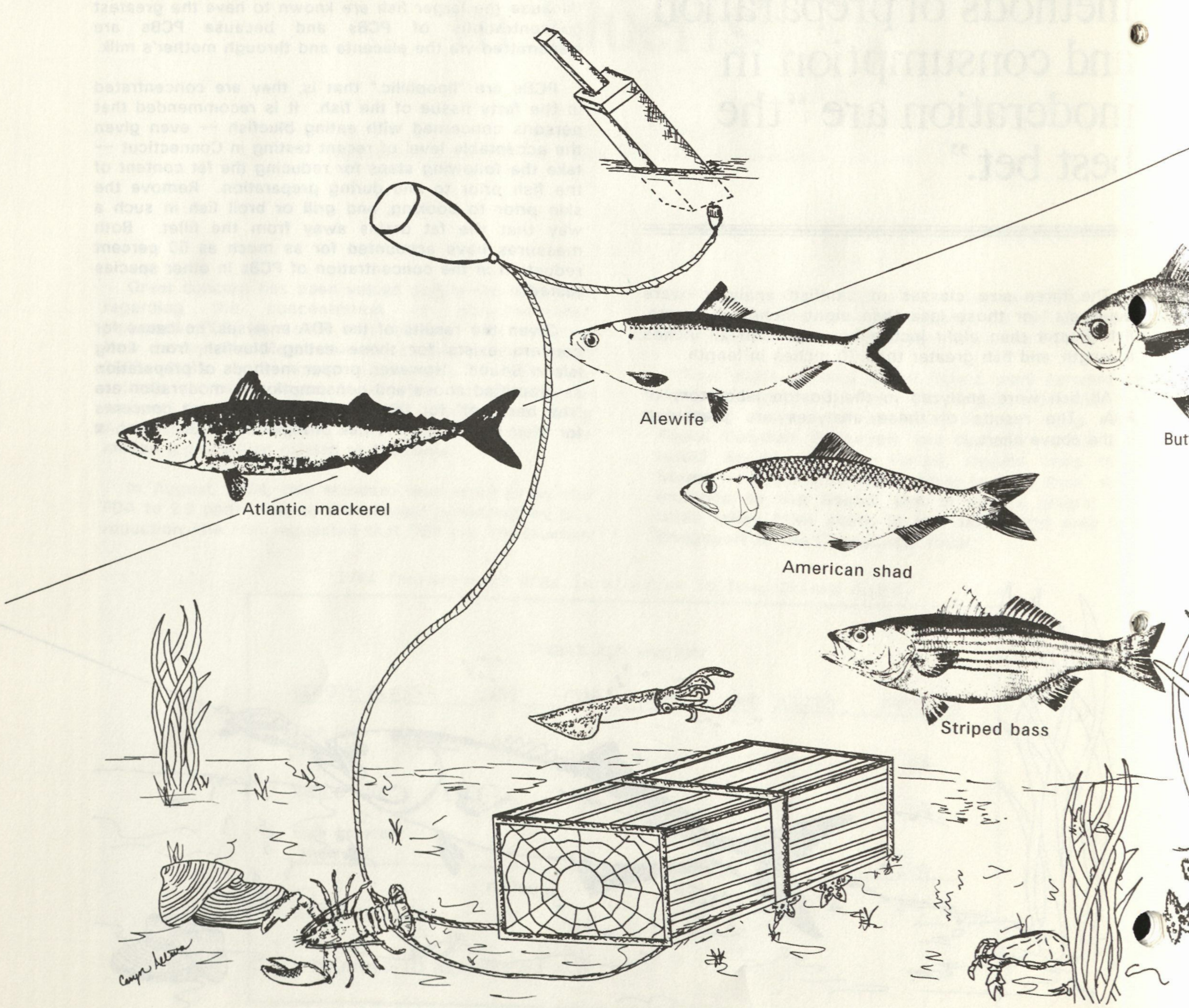
PCBs are "lipophilic," that is, they are concentrated in the fatty tissue of the fish. It is recommended that persons concerned with eating bluefish -- even given the acceptable level of recent testing in Connecticut -- take the following steps for reducing the fat content of the fish prior to and during preparation. Remove the skin prior to cooking, and grill or broil fish in such a way that the fat drains away from the fillet. Both measures have accounted for as much as 50 percent reduction in the concentration of PCBs in other species tested.

Given the results of the FDA analyses, no cause for concern exists for those eating bluefish from Long Island Sound. However, proper methods of preparation as identified above and consumption in moderation are "the best bet" for those persons still having concerns for their health and the risk of ingesting PCBs. ■



Commercial and Sport F of Long Islan

Illustration by Caryn Al



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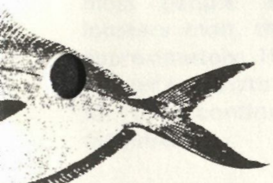

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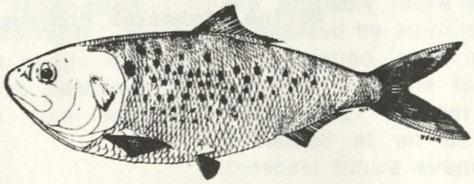
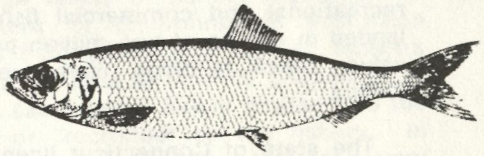
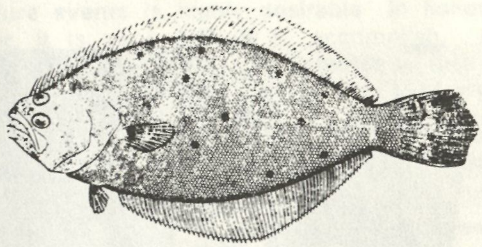


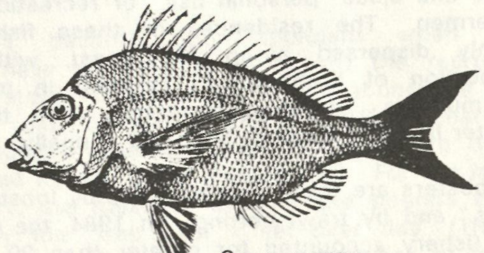
Menhaden



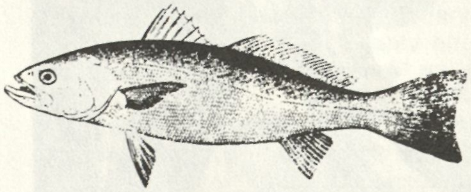
Atlantic herring



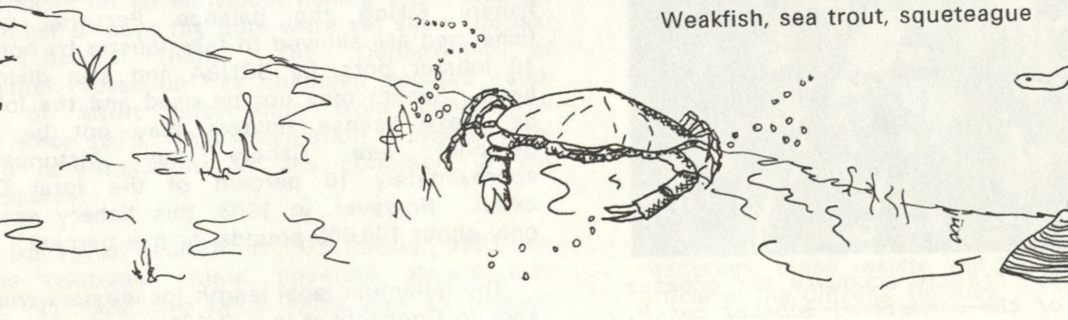
Summer flounder, fluke

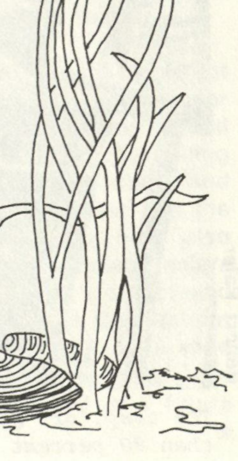


Scup, porgy



Weakfish, sea trout, squeteague





The American Lobster Fishery in Long Island Sound

Years of abundance may be over

By Eric M. Smith,
Assistant Director of Fisheries
Marine Fisheries Program

Robert Paier

The trap, or "pot," fishery accounts for greater than 90 percent of the commercial lobster catch.

The American lobster in Long Island Sound supports recreational and commercial fisheries which, in 1984, landed in excess of two million pounds. In commercial value, these landings were worth over six million dollars.

The state of Connecticut licenses between 600 and 700 commercial lobstermen each year and between 2,500 and 3,500 "personal use," or recreational, lobster fishermen. The residences of these fishermen are evenly dispersed along the coast, with a sm proportion of both groups residing in more inland communities. Revenue generated from the sale of lobster licenses exceeds $125,000 annually.

Lobsters are taken commercially by lobster traps, or "pots," and by trawl netting. In 1984, the commercial pot fishery accounted for greater than 90 percent of the two million-pound commercial catch, with the trawl fishery taking the balance. Personal use lobster fishermen are allowed to take lobster by not more than 10 lobster pots, by SCUBA and skin diving, and by hand. Spears may not be used and the lobster taken by these license holders may not be sold. The personal use fishery has historically taken approximately 10 percent of the total Connectic catch. However, in 1983, this fishery accounted for only about 100,000 pounds, or five percent.

The minimum legal length for lobsters which may be kept in Connecticut is 3-3/16" in carapace (body shell)

ic Smith

The perception is that the excellent years are at an end.

length. This length is determined by measuring the shortest distance on the lobster from the rear of the "eye socket" to the rear of the carapace.

Lobsters grow by "molting" or the shedding of their shell. It is the only time that they increase in size. The newly-molted lobster has a soft, rubbery shell which, in a matter of days, will harden to the condition most people are familiar with. When legal-sized lobsters molt, they increase in "growth increments" of approximately 15 percent in length. As a result, the lobster's growth is termed "discontinuous," as opposed to the continuous growth process in fish and mammals.

Lobster resources along the northeast U.S. coast are characterized by high levels of fishing mortality. In 1976, the Department of Environmental Protection determined that the fishing mortality rate on lobsters in Long Island Sound resulted in over 85 percent of all legal lobsters in the catch being newly molted into the fishable population, or "recruited" to the fishery. In comparison to other marine fisheries, this is a very high rate of fishing.

Lobsters become very abundant when great numbers have survived to molt into the recruit, or catchable stage. One measure of this abundance is the catch per unit of fishing effort (CPUE). There are various ways of measuring CPUE, depending on the species and fishery being investigated. For the lobster pot fishery, the measure used is the pounds caught divided by the "trap haul x set-over day" (THSOD). THSOD is the relationship of the number of pots a fisherman hauls on an individual fishing trip multiplied by the number of days the pots were set since the last time he hauled them. The Department of Environmental Protection has collected detailed catch per unit of effort information from commercial fishermen since 1975. This information is instrumental in making determinations of the condition of the lobster resource.

During the seven years from 1975 through 1981, the CPUE was relatively stable, hovering around 0.20 lb/THSOD. In 1982, the CPUE index was 25 percent higher than in 1981 and was higher than any other year in the eight years that such information had been collected. The increase in abundance continued through 1983 but has declined in 1984.

The high abundance of the last two years has been manifested in the large landings made late in 1982 and in 1983. However, the continued high landings in 1984 are probably more a result of the increase in effort stimulated by word of the recent high landings than of a continued high abundance of lobsters. This is inferred from the fact that the abundance index has declined 27 percent from 1983, while landings have remained at an all-time high. While an ability to forecast future events is highly desirable in fisheries management, it is very difficult to accomplish. Our perception of recent events in the fisheries is that the excellent years from late 1982 through mid-1984 are at an end. Only time will tell if this "forecast" is accurate.

Recent trends in Connecticut lobster fisheries relate to the re-development of a trawl fishery for lobsters. The most probable cause of the trend change is the great abundance of lobsters that has been available to Long Island Sound fishermen and the efficiency of trawling for lobsters at certain times of the year. The controversy over this changing pattern of use prompted the Connecticut General Assembly in 1983 to restrict the directed trawl fishery in western Long Island Sound and to allow only an incidental catch, or "by-catch," of lobsters on trawl vessels in that area.

During 1983-1984, the DEP and the Sea Grant Marine Advisory Service conducted a major investigation of lobster management in Long Island Sound, with special reference to the effects of trawling on the resource. Investigators looked at damage and mortality caused by pot and trawl fishing gear and the effects of trawling on the seabed. They also conducted socio-economic surveys of lobster dealers and lobster fishermen and analyzed gear conflict and economic competition as they exist in the Connecticut fisheries. The results of these studies should shed new light on the influence of the fisheries on our resources; these results will be presented in a future article of the Citizens' Bulletin. ■

Environment Committee Named by General Assembly

By Leslie Lewis,
Citizens' Participation Coordinator

The November elections changed the make-up of the General Assembly and its various committees. The Environment Committee, which deals with environmental and agricultural issues, was no exception. The following are members for the 1985-86 legislative sessions:

Rep. John J. Tiffany, II
Chairman
Sterling City Road
Lyme, CT 06371

Sen. Eric Benson
Chairman
Rte. 87
Lebanon, CT 06249

Rep. T.J. Casey
Vice Chairman
59 Green Street
Milford, CT 06460

Rep. Sidney J. Holbrook
Spencer Plains Road
Westbrook, CT 06498

Rep. Peggy Beckett-Rinker
29 Howard Avenue
Branford, CT 06405

Rep. Peter Cuprak
83 West Town Street
Norwich, CT 06360

Rep. Philip Tuthill
126 Broad Street
Groton, CT 06340

Rep. Raymond Collins
6 Morris Street
West Haven, CT 06516

Rep. Angelo Fusco
661-1 Main Street
Plantsville, CT 06479

Rep. John Metsopoulos
271 Old Spring Road
Fairfield, CT 06430

Sen. James McLaughlin
155 Good Hill Road
Woodbury, CT 06798

Sen. Amelia Mustone
Ranking Member
119 Lambert Avenue
Meriden, CT 06450

Rep. Raymond Joyce
Ranking Member
86 Highland Terrace
New Britain, CT 06053

Rep. Teresalee Bertinuson
227 Melrose Road
Melrose, CT 06049

Rep. Mary Mushinsky
72 South Main St., Apt. 4-1
Wallingford, CT 06492

Rep. John Mordasky
108 Hydeville Road
Stafford Springs, CT 06076

Rep. Stephen J. Duffy
457 Farmington Avenue
Bristol, CT 06010

Rep. Joan Hartley
206 Columbia Boulevard
Waterbury, CT 06710

The current session is the "long" one held every other year, which means it extends into June. Several of the topics expected to be taken up by the Environment Committee include solid and hazardous waste and potable water legislation.

You should be able to track environmental legislation by watching your daily newspapers. Bills are listed by title and number and hearing dates are given. If you have a question you can contact the Environment Committee room at 566-5083 or the Bill Room at 566-2326. The general legislative information number is 566-7050.

Many of the local environmental groups maintain networks or hotlines for bills of high importance. Others, like the Connecticut Audubon Society, provide periodic legislative updates for their members. They can be helpful if you are concerned about the environmental impact of a proposed bill.

Remember that hearings offer you the opportunity to make known your opinion of a bill. You can also contact your senator or representative directly. Make sure you keep informed on legislative activities; if not, you could be surprised by a new law that you didn't know about. The legislative process isn't conducted in a vacuum. Participate -- we'll all be the better for it. ■

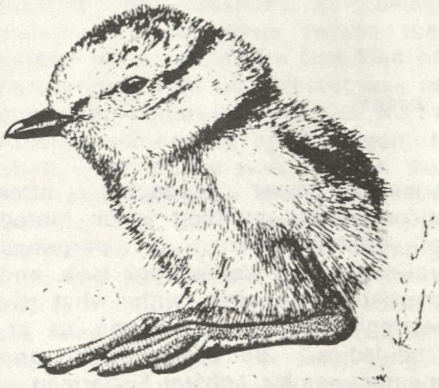
Protecting the Piping Plover

By Diane Giampa, Public Participation Coordinator

Using its authority under the Endangered Species Act of 1973, the U.S. Fish and Wildlife Service is proposing to list the piping plover as an endangered and threatened species. The piping plover (Charadrius melodus) is a small, stocky shorebird, about 7 1/4 inches long. Along the east coast, they breed in single pairs or in small colonies on sandy, sparsely-vegetated beaches. Inland, they use alkaline lakes and river sandbars. The bird's usual call is a clear, melodious "peep-lo," the first note lower than the second, and they also utter a series of short whistles on a descending scale. They lay their eggs in shallow depressions in the sand that are often lined with pebbles or shells. A typical nest will contain four khaki-colored eggs with fine, chocolate-colored flecks. The eggs are laid at daily intervals and breeding birds will usually not allow others within 100 feet of their nest.

By 1900, the piping plover, described by early naturalists such as Audubon as a common resident on the beaches of the Atlantic coast, had been greatly reduced by year-round shooting, mostly for the millinery trade. In some areas the plover was close to extinction. With federal protection the bird had recovered by the 1920s along the Atlantic coast and was considered common. Since that time, however, there has been a decrease in the population and it has vanished as a nesting species from many areas. The Great Lakes breeding population, for example, had dropped from historic numbers of 600 to 800 pairs to only 20 pairs in 1979. The 1984 worldwide population does not exceed 1600 pairs and as of 1983, only 17 pairs survived in Connecticut. Since 1972, the National Audubon Society's "Blue List," a list designed to serve as an early warning system for North American breeding birds, has continued to include the piping plover each year as a bird in potential danger.

Over the past 40 years, in Connecticut as well as along the rest of the Atlantic coast, the number of vehicles and people on beaches has greatly increased. Plovers are attracted to unvegetated beach areas in early spring, only to be disrupted after human recreational and vehicular activities have intensified in the late spring and summer. Foot traffic, dune buggies and other vehicles can crush eggs and chicks. Human presence can disrupt incubation or separate chicks from their parents. Increased coastal development has also meant an increase in the number of unleashed dogs, who often prey on piping plover chicks and eggs. In Connecticut, there have also been documented cases where opossums and raccoons have eaten eggs, and where tides have washed away a nest. Deliberate vandalism has caused one nest loss, and one egg was stepped on by an interested birder who knowingly entered a posted area.



The young birds leave the nest a few hours after hatching and seek shelter under nearby shrubbery where they have a better chance for survival. (They are not able to fly until they are about a month old.)

Connecticut's Coastal Management Act includes policies meant to protect and manage shorelands in order to promote their use as critical habitats for the bird, plant, and animal species which are becoming increasingly rare in our area. In addition to this, the Connecticut Nature Conservancy established a Least Tern/Piping Plover Recovery Program in 1982, which consists of a director and a number of volunteers. The program's goals are to post the location of and, where possible, to protect from human disturbance all colonies of least terns and piping plovers in Connecticut. The volunteers erect heavy plastic signs mounted on six-foot wooden stakes and use them to close off nesting habitat to pedestrians and their dogs. The director spends the season monitoring nests and banding chicks of both species. Each nesting area is visited at least once a week for study and reposting of signs. Volunteers also help with special needs such as the Fourth of July weekend and night guard duty. (In Connecticut, fireworks displays are held on beaches, and two nesting beaches must be closed and patrolled during the displays.)

If the U.S. Fish and Wildlife Service succeeds in listing the piping plover as threatened and endangered, this would provide the groundwork for a national effort to develop a recovery plan for this bird. Such a plan would bring together both state and federal efforts for conservation of the plover. The plan would establish an administrative framework, sanctioned by the act, for agencies to coordinate activities and cooperate with each other in conservation efforts. ■

Essay

Ghost Story

By Robert Paier

A few years ago, I spent a summer working on a lobster boat in Nahant, Massachusetts. It was a magical, colorful, adolescent kind of summer. The fact was, I was significantly beyond adolescence, unarguably into what had to be called maturity. Yet, rather suddenly, there I was, my subsistence depending on what I could, or could not, pull out of the Atlantic Ocean. Things happen like that. And so, that summer played itself out on the keen edge of adventure and general riskiness that lobster fishermen and fourteen-year-old boys know on a daily basis. And, in spite of everything, it continues to be one of those few, precious, rare things that make me smile when I think about it. You can't get enough of those memories, the way I see it.

It was my honor and privilege to be the assistant of Buddy Mikolinski, unofficially acknowledged to be the lord prince and most outrageous of all Nahant lobster fishermen. Nobody else came close. In a group which highly prized outrageousness, Buddy was out there all alone. He achieved his status by means of a superior beer capacity, utter disregard for anything which hinted of "establishment," a perpetual you-wanna-try-something? look, and consistent success with what he leeringly, knowingly referred to as, "the ladies." Buddy, my friend and mentor, was Mr. Lobster Fisherman.

Lobster fishermen are a tightly-knit group. It's hard for an outsider to crack their fraternity. And, once you do, you realize that you haven't cracked anything at all, because if there's one thing which arouses a lobster fisherman's paranoia more than a landlubber, it's another lobster fisherman. Because of the nature of the work, the subtle relationships that evolve with such entities as, say, for example, the IRS, and the personality type which is drawn to this kind of thing in the first place, each lobster fisherman is convinced that he, individually, is the absolute last of the independent operators. And, as such, not only are lobster fishermen naturally disinclined to have anybody push them around, but in a deeper, possibly religious sense, they seem to feel that they have an obligation to insure that that never, never be the case.

I loved lobstering. At the time, and maybe even a little bit now, I had the feeling that everybody wanted to be a lobster fisherman. The life is sheer exhilaration, a constant celebration of something nameless and primal, something truer than most of us ever touch. Getting up in the morning, just a shade hungover, choking down hot coffee at a local joint patronized only by other lobster fishermen, rowing out through the chill fog to the boat, loading an impossibly heavy 55-gallon drum of putrid, stinking, oily pogies on board, skinning hell out of your knuckles while doing it, and then starting up the engine and chugging out to the pots. Oh, it was wonderful.

Buddy had about 140 pots, as I recall. It took us, together, about six hours to get to them all. We worked as a team, a nice smooth rhythm developed. We got so we could anticipate each other's moves in the small space of the boat and, in a very short time, we were bouncing those very heavy lobster traps around like, well, the Celts. We could chug out to a buoy, and Buddy would circle it while I made the grab. He would hook the line onto a pulley-type motor, and when the pot came out of the water, we'd both sling it aboard. And I can tell you that every time a pot emerged from the water, it was like coming downstairs on Christmas morning. You just didn't know what you were going to find. It could be crabs, any and all kinds of fish, eels, one, two, six, or no lobsters, mermaids, anything. There was magic there. Anything could have happened. Anything was possible.

Buddy would deftly extract the "bugs," as I usually didn't volunteer to go up against those pincers. He would measure them for size, throw back the small ones, and put rubber bands around the claws of the keepers. I would extract whatever else was in there, and refill the pot with a handful or two of raunchy smelling pogies. (Whatever you do, don't get that stuff on your clothes.) Then, the pot went back into the water, and we'd be off to the next one. And the next. One hundred and forty times. Grueling, exhausting, fantastic.

And, if the daily encounter with the sea, the sky, the sun, the strange, mysterious creatures of the deep weren't enough, Buddy, during those few moments when we weren't actively engaged in very hard labor, would tell me some of the lore of Nahant lobster fishermen. In particular, I remember him telling me often, and in detail, about Cooney. If Cooney had a first name, I never heard it. It was just Cooney. Cooney was the lowest, sneakiest, most cowardly, lying, thieving rat in the history of Nahant. He was a lobster fisherman who would come out early and rob your traps; he would watch you with binoculars to see where you were putting out your traps because he assumed, usually correctly, that others knew more than he did. Cooney, who would laugh if you ran out of gas, who could squeeze a dollar till it couldn't breathe, Cooney, who never, ever, bought anybody a beer in his life, Cooney, who was capable of anything treacherous and dastardly and rotten a lobster fisherman could think of. It was funny because it seemed that everyone was actually convinced that Cooney was indeed the incarnation of evil in the world. And, what was even funnier, maybe he was.

I remember that Buddy said one time Cooney did something so heinous and so contrary to the laws of decency (I forget precisely what it was) that his lines "became cut." All of them. Someone, Buddy either didn't know or didn't care to say, woke up very early one morning and sliced the lines on every single one of Cooney's clearly marked buoys. It was something that had to be done, a retaliatory step that had to be taken. Justice was served. For a time thereafter, Cooney had been somewhat subdued, but he re-outfitted himself, at a cost of several thousand dollars, and was soon back to his old tricks again. Cooney was hopeless.

I realized at the time that cutting somebody's lines was not a good thing to do. A bit on the crummy side. On the other hand, if anybody deserved it, Cooney certainly did. He knew the rules, or he should have. If that's the kind of punishment that was deemed appropriate by a group of his peers, who was I to question it? I could live with Cooney's cut lines. Easily.

And then, that summer, like all summers, ended. A few million years passed, a few million miles were travelled, a civilization or two rose and fell. Gone. Other things. Changing, changing.

Recently, I was thumbing through a book on fisheries titled, Forests of the Sea, by John L. Culliney, and I stopped at a chapter on lobstering. The chapter opened describing one particular lobster, which in itself was a new idea, as I had never before thought of lobsters as being individuals. For some reason the lobster does not inspire that kind of perception. That one lobster was in one trap, somewhere in the North Atlantic, somewhere on the Georges Shelf. The lobster was alone in the trap, and had been there for three months. It was weakened and starving to death. The line running from the trap to the marking bouy 200 feet above had been cut, as had the lines to the hundred or so other traps connected on the same longer line. The trap would never be retrieved. The lobster inside would never get out.

That lobster had been caught in a ghost trap. There are, right now, countless thousands of ghost traps in operation. If the traps are made of wood, their time of effective operation is somewhat limited, because wood will break up eventually when submerged in saltwater. If the trap is made of plastic-coated wire-mesh, it will continue to do what it does for a long, long time.

The operation of a ghost trap tends to perpetuate itself. After the original lobsters have eaten the original bait, they weaken and die, and then their decomposing bodies become bait for other lobsters, and on and on. Also, the longer a trap is under water, the more it gets encrusted with seaweed and other plant life and becomes, for that reason alone, very attractive as a secure, place on the ocean floor.

Nobody knows how many ghost traps there are. On January 25, 1975, in the largest recorded single accident of its kind, 3,000 ghost traps were created in one night by a trawler fishing 240 kilometers off of Newport. It is estimated that in the coastal water of the state of Maine, 300,000 ghost traps are created each year. That, of course, can only be an estimation.

And so, in that way, I found out about ghost traps. I hadn't known about this before, hadn't suspected it, not on any conscious level, anyway. Now, it seems so very clear and obvious, but at that time, when I was in Nahant, working with Buddy, laughing about Cooney's latest exploits, I missed it. didn't see it.

Alright, then. That's passed. Already finished. If had seen it then, maybe I would have gone about some things a little differently. Who knows? It's gone. We're human beings here, creatures of error, we're not expected to know everything. But I think, I hope, the way to approach things like this is to be a little bit forgiving of ourselves and try, next time, to do a little better. ■

A Gathering of Eagles

It's probably the largest dinner party in the world -- the gathering of about 3,500 bald eagles to feast on salmon every year from October through January.

"It's no small assembly," says National Wildlife magazine, a bi-monthly publication of the National Wildlife Federation. On one three-mile-long stretch of Alaska's Chilkat River it is possible to stand in one place with a pair of binoculars and see 2,000 eagles.

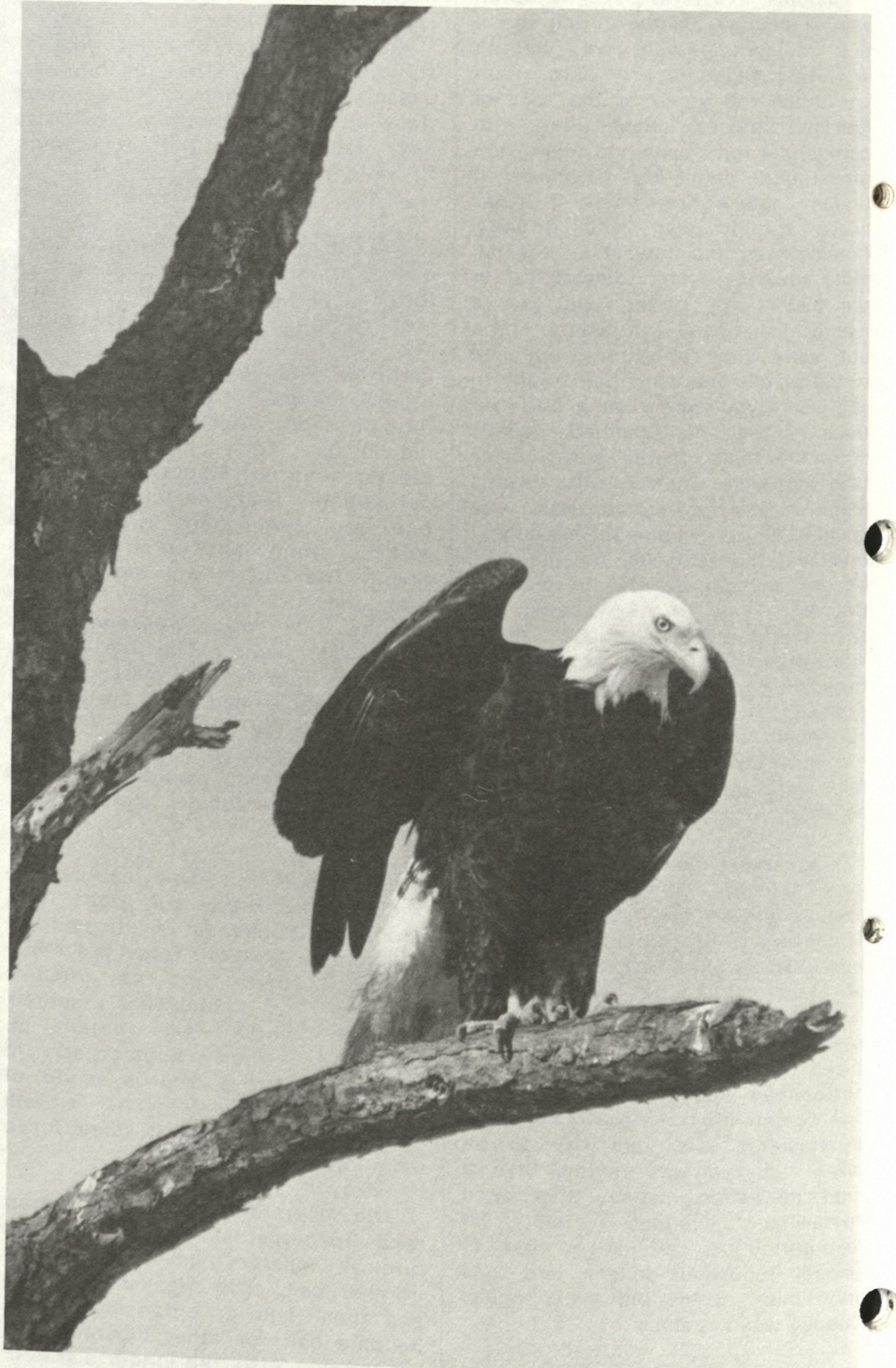
The eagles fly to the isolated spot 50 miles north of Juneau to take advantage of the annual spawning run of chum and silver salmon up the 45-mile-long Chilkat.

The salmon enter the Chilkat later than other Alaskan streams because of its warm water. The Chilkat's warm water, which is due to the upwelling of water through subterranean gravel beds, allows the fish to spawn into late fall and early winter.

The salmon therefore provide a steady food source for the eagles, especially in winter and early spring -- the most stressful times for eagles. The fish arrive in the cold weather; after they spawn and die, the cold air freezes their carcasses until spring, when they thaw out and provide fresh food for the eagles.

Eagles from as far away as Washington state fly to partake in the feast that researchers believe provides a key to eagle abundance in Southeast Alaska, according to National Wildlife.

In 1982 Alaska created a 48,000-acre Chilkat Bald Eagle Preserve. Citizens of Haines, the largest town on the banks of the Chilkat, are currently developing a plan to attract another species to the river -- people. The citizens hope to draw tourists to see the majestic winter congregation of bald eagles. ■



It is possible to stand in one place with a pair of binoculars and see 2,000 eagles.

A Tribute to a Friend

On December 14, 1984, William F. Miller, Director of State Parks and Recreation, died. The following was an announcement made on December 5, 1984, by Stanley J. Pac, Commissioner, Department of Environmental Protection, of Mr. Miller's anticipated retirement.

"I regret to have to announce the retirement of Bill Miller. Bill has been a fixture in this and predecessor agencies for many years, beginning at the old Clam Shed concession at Hammonasset Beach at the age of 15. Indeed, one of the unique items in our historic files is a picture Bill took of the ill-fated Hindenburg as it flew over the beach, en route to its final New Jersey destruction.

"In these years Bill has been a stalwart defender of our state parks and a productive, progressive manager. For those of you who know him, I need not say more. However for those of you who did not get to know him well, I would like to recount some of the major accomplishments of his distinguished career. These included restoration of the sand dunes at the flood-endangered Hammonasset Beach, development of a crack lifeguard corps at state park beaches, development of an effective camping reservation system at minimal additional cost, initiation of many new programs including group, off season, canoe, and horse camping, snowmobiling, and hang gliding.

"With Bill's departure also goes one of the last links to the old State Park & Forest Commission and an earlier and perhaps simpler Connecticut. Nevertheless, his mark will last as will his example. Therefore in saying goodbye I wish to pay public tribute to a friend and highly respected colleague." ■

IN MEMORIAM

Bill Miller is no more with us.

An Iron Age warrior in an age of bureaucrats, Bill was ever the clan chief defending the tribal turf.

He was a farm boy from Madison whose state parks career began at 15 at Hammonasset's Clam Shed. A scholarship-winning athlete, World War II pilot, and park administrator, Bill served his state and country well.

A loving father and husband and devoted member of his church, he was known best to his colleagues as blunt, honest, and forceful, ever leading the fight for Connecticut's state parks. We respected him as an example of loyalty and courage prevailing over expediency and opportunism, and appreciated the opportunity to fight alongside him.

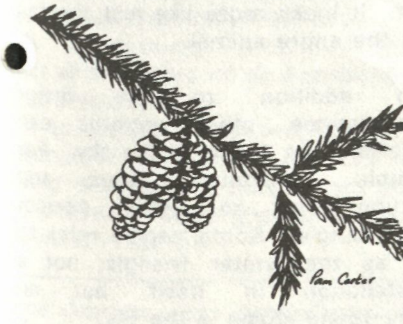
In living, he fought the good fight. In dying, he provided an example of guts and determination to us all.

by Joe Hickey

Trailside Botanizer

Red Spruce

By G. Winston Carter



Spruces as a group are rather easy to identify. They are pyramid-shaped, cone-bearing evergreens with rather stiff, prickly needles that are nearly square. These needles are modified leaves which are borne singly on peg-like bases rather than in bunches, as in the pines. This gives a feeling of roughness to the branchlets when the needles are removed. Fir, balsam, yew, and hemlock all have needles that are also borne singly, but they are flat rather than square and soft rather than stiff.

It is more difficult to identify individual species of spruce. They differ somewhat in the color of their needles and cones, position of branches (horizontal or drooping), size, flexibility and persistence of their cones, and the hairyness or smoothness of the branchlets. A hand lens is necessary to see this latter feature.

One species of spruce that grows naturally in Connecticut is red spruce. It is at the southern limits of its range in New England; however, it is found farther south in mountainous regions of the Appalachians. The habitat of red spruce may vary from mountain slopes to well-drained uplands or margins along waterways.

The cones of this species of spruce are reddish in color and vary from 1 1/4 to 2 inches. They drop from the tree as they ripen, unlike the black spruce, the only one of our spruces that has cones which may persist on the trees for years. The small branches of red spruce are hairy compared with those of white spruce which are smooth. The color of the needles of red spruce is often greenish-yellow and they grow out in all directions on the branchlet.

The best quality wood of red spruce is used for sounding boards of pianos and bellies of violins. Most of the remaining lumber is used for pulp and general construction. The spruce cone seeds are the preferred food of many seed-eating birds. ■

Upcoming Events at Goodwin State Forest

Saturday, Feb. 9: Bluebird Housing Project, a workshop. Pre-registration required. Goodwin State Forest, Rt. 6, Hampton. 1 PM. (203) 455-9534.

Wednesday, Feb. 13: "The American Indian: Past and Present," by Dr. Robert Bee, University of Connecticut; Ed Sarabia, DEP Indian Affairs Coordinator; Mikki Aganstata, Connecticut Indian Education Council. Co-sponsored by the Hampton Historical Society. 7:30 PM at the Hampton Congregational Church, Rt. 97, Hampton. (203) 455-9534. Everyone welcome.

Sunday, Feb. 24: Cross Country Skiing Open House, 10 AM - 2 PM at the Goodwin State Forest, Rt. 6, Hampton. Co-sponsored by the Northeast & Southeast Groups of the Sierra Club. Everyone welcome. (203) 455-9534. (Hike, if no snow.)

Sunday, Mar. 3: "Our Wildlife Neighbors," 2 PM. A talk about Connecticut's non-game species by Rita Maroncelli, DEP Wildlife Bureau biologist, At the Goodwin State Forest, Rt. 6, Hampton. (203 455-9534.

Sunday, Mar. 17: A "waking-up" and "coming-home" walk; looking for spring birds and wildlife with Ellen Smith, naturalist and birder. 1 PM. Goodwin State Forest, Rt. 6, Hampton. (203) 455-9534.

Sunday, Mar. 31: Demonstration and discussion of taxidermy by Robert Kjellquist, prize-winning taxidermist. 2 PM. Goodwin State Forest, Rt. 6, Hampton. (203) 455-9534.

For more information:
Lois Kelley, Director
Goodwin Forest Conservation Center (203) 455-9534. ■

The Night Sky

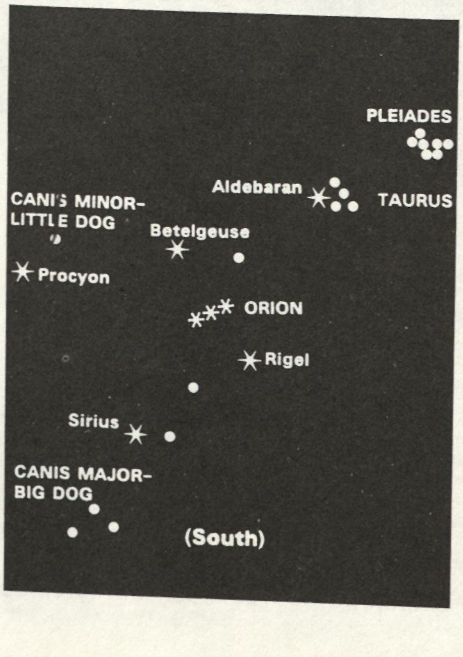
The Sky in February

By Francine Jackson
Director, Gengras Planetarium

February is a perfect month to introduce yourself to the nighttime sky. The brilliant winter stars are in an ideal position to be seen, and the atmosphere is relatively still. Unfortunately, it is rather cold, so I first suggest eating a hot meal, with lots of hot chocolate, before you begin. Then, dress warmly, and walk outside.

Looking up, toward the south, you will see three stars in a row. This is the belt of Orion, the Hunter, one of the most famous of all winter constellations. Above the belt is the bright star Betelgeuse (BEET-el-juice), the hunter's shoulder; under the belt is Rigel (RI-jel), his knee. According to mythology, Orion was the greatest hunter who ever lived. Unfortunately, though, he was also very vain, boasting he could kill every animal that stalked the earth. Needless to say, the animals were quite put out by this, and did everything possible to rid the world of Orion. An example of this can be seen in the sky. Draw a line through the three belt stars, and continue it toward the right, or west. The star you cross is Aldebaran (al-DEB-a-ron), the red eye of Taurus, the Bull. Taurus' face is a perfect letter V, with Aldebaran at the upper left corner. In the sky, Taurus is charging Orion, in hopes of being the one to put an end to the bragging hunter.

Even as today hunters have companions, Orion has two dogs to accompany him. Again returning to the belt stars, this time extend the line to the left, or east. The brilliant star you see is Sirius (SER-e-us), th brightest star in the entire nighttime sky. Sirius is often called the Dog Star, because it marks the nose of Canis Major, the Big Dog, one of the very few constellations that actually resemble their names.



Above the Big Dog is Canis Minor, the Little Dog, really composed of only two stars visible with the naked eye, Procyon (PRO-see-on), and Beta Canis Minoris, the star to Procyon's right. It looks more like just the tail than the entire animal.

In addition to the major constellations, other patterns can sometimes be found in the sky. For example, Betelgeuse, Sirius, and Procyon form an almost perfect right-triangle. Some people refer to this as the winter triangle, not a constellation in itself, but an easily-found shape in the sky.

Not bad for a first night's observing: four constellations, the winter triangle, and the brightest star in the night sky. But now, it's reall starting to get cold. Time to g back into the house for a little warmth and, most importantly of all, more hot chocolate. ■

Wadsworth Heads Boating Advisory Group

Dennis DeCarli, Deputy Commissioner of the Department of Environmental Protection (DEP), has announced the organization of the Connecticut Boating Advisory Council and the election of John Wadsworth of the Connecticut Boatmen's Association to serve as its first chairman.

Seven representatives of public boating organizations met to establish the group which ultimately includes representation from eight member-organizations covering all aspects of commercial and recreational boating interest. The organizations are the Connecticut Marine Trades Association, the Connecticut Boatmen's Association, the Connecticut Commercial Fishermen's Association, the Fairfield County Commodores' Council, the U.S. Coast Guard Auxiliary, the Connecticut Sportsmen's Alliance, the Connecticut Bass Anglers' Federation, and the U.S. Power Squadron.

The purposes of the Advisory Council as adopted are:

1) to help in improving communications between the boating public and the Conservation and Preservation Division of the DEP;

2) to delineate problems that affect all the users of all Connecticut water areas; and

3) to assist the Conservation and Preservation Division of the DEP in solving problems in connection with Connecticut's boating-related land and water resources.

As chairman of the new council, John Wadsworth will preside over its monthly meetings. He has expressed the hope that this new forum will provide an effective method for enhancing the use of one of Connecticut's most valuable natural resources, its waters. ■

"The Connecticut Department of Environmental Protection is an equal opportunity agency that provides services, facilities and employment opportunities without regard to race, color, religion, age, sex, physical handicap, national origin, ancestry, marital status or political beliefs."

Year-End Tip Review

Dennis DeCarli, Deputy Commissioner of the Department of Environmental Protection (DEP), today expressed his appreciation to the public for the support the recently introduced TIP Program is receiving.

"From the day the program was introduced in late September through the end of December, more than 128 calls have been received to report wildlife-related violations," DeCarli said. "Those complaints have resulted in 46 arrests. That is a very impressive start in a state the size of Connecticut."

TIP, or Turn In Poachers, was introduced by DeCarli, Commissioner Stanley Pac and John Reilly, President of the Connecticut Wildlife Federation, at a press conference on September 21, 1984. The program is designed to provide an opportunity for concerned citizens to report fisheries and wildlife-related law violations through a toll-free telephone line, remain anonymous, and claim a reward if the information furnished leads to an arrest. Several rewards have been paid and others are awaiting further contact from the original complainant. Reports can be made by calling 1-800-842-HELP.

"The one area in which further assistance is required," DeCarli said, "is financial support. The reward system is supported by contributions from individuals, sportmen's organizations, and businesses. Although a few clubs and a very few individuals have already contributed, the program needs additional contributions."

Although the great majority of the reports received were concerned with deer jacking or other deer-hunting-related violations, other complaints covered a wide variety of subject areas. General hunting and taking protected species were subjects covered by TIP reports during the program's first ten weeks.

"Since 68 of 128 reports involved the illegal taking of deer," DeCarli noted, "it is obvious that this is a major concern of Connecticut citizens. We are grateful for the assistance in this area and hope that we can count on continuing citizen involvement." ■

Parts per million: When discussing pesticides and pollution, the amounts of various substances are given in parts per million (ppm). Just how much is one part per million? It is about one minute in two years, one inch in 16 miles, one ounce of salt in 62,500 pounds of sugar, or one ounce of sand in 31 tons of concrete.

Endnote

On a Monument to the
Passenger Pigeon

"Our grandfathers were less well-housed, well-fed, well-clothed than we are. The strivings by which they bettered their lot are also those which deprived us of pigeons. Perhaps we now grieve because we are not sure, in our hearts, that we have gained by the exchange. The gadgets of industry bring us more comforts than the pigeons did, but do they add as much to the glory of the spring?"

Aldo Leopold
A Sand County Almanac.
Oxford University Press, 1949

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